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St-Michel, Liège

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(11) Free Amino Acids in the Intracellular Osmoregulation of Euryhaline Marine Worms

By CH. JEUNIAUX, GH. DUCHÂTEAU-BOSSON and M. FLORKIN. (Department of Biochemistry, University of Liège, Belgium)

Duchâteau, Jeuniaux & Florkin (1961) have pointed out that, in more or less euryhaline marine invertebrates, the degree of euryhalinity is accounted for, either by an adjustment of the intracellular concentration, a regulation in which free amino acids are involved in all cases studied so far, or by a combination of an osmoregulation of the blood and of an adjustment of the intracellular concentration to the level maintained in the blood as a result of osmoregulation. Cases in the first category are represented by *Mytilus* (Potts, 1958) and *Arenicola marina* (Duchâteau *et al.* 1961). Among the forms belonging to the second category, we find *Carcinus maenas* (Duchâteau & Florkin, 1956; Shaw, 1958) and *Eriocheir sinensis* (Duchâteau & Florkin, 1955). The authors have shown that the situation prevailing in *Arenicola* is also

present in *Perinereis cultrifera*, a marine annelid showing a limited degree of euryhalinity. This species has no osmoregulation of the blood but is able to adjust the intracellular concentration, a process in which the variation of concentration of the free amino acids plays a role. A much more euryhaline annelid, *Nereis diversicolor*, relies on osmoregulation of the blood and on an intracellular regulation realized at least partly by a marked change of concentration of intracellular free amino acids. The low degree of tissue hydration which is observed in diluted media accounts only for a small percentage of the change observed in the concentration of the free amino acids.

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Duchâteau, Gh. & Florkin, M. (1956). *J. Physiol., Paris*, **48**, 520.
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